Rate Design to Promote State Policies
Docket Nos. 2021-00325 and 2021-00198

Staff Rate Design Straw Proposal
April 7, 2022

I. Introduction

The purpose of this Straw Proposal is to present a set of actionable approaches for designing and implementing T&D rates to support retail electricity end-uses consistent with State policies related to beneficial electrification and renewable resources. Specifically, the Proposal sets out certain rate designs/structures that would apply to (i) electric vehicle charging; (ii) heat pumps; and (iii) energy storage facilities.

In the context of these rate designs/structures, Staff proposes the following general attributes and approaches:

- At least initially, these rates would be available to customers on an optional basis. In order to facilitate making beneficial rate structures available to customers as soon as possible, existing rate designs would remain in place unless there is broad agreement on certain changes (e.g., raising minimum charges and lowering usage charges) with the generally applicable rates. For example, in Central Maine Power Company's (CMP's) territory, its Rate A would be the default rate for residential customers;
- Customers would be allowed to choose whether the applicable end-use load that would take service under the optional rate would be (i) separately metered (in which case the customer would be charged for the meter-related costs),[1] or (ii) included (metered) with the customer's other loads;

[1] This would not apply to customers that already have a separate meter that the utility paid for.

- Pending evaluation of the ongoing pilot programs (in Docket No. 2019-00217), existing utility Terms and Conditions (T&C) would apply to make-ready work, e.g., for Electric Vehicle (EV) charger installation;
- CMP, Versant Power (Versant) and, ideally, Efficiency Maine Trust (EMT or the Trust) would develop and implement a focused customer education program regarding the availability and potential benefits of the new, optional rates;

In developing this Straw Proposal, Staff has endeavored to take into account the following:

- The State policies and goals set forth in P.L. 2021, ch. 298 and P.L. 2021, ch. 402;
- Simplicity and understandability;
- The underlying cost of the applicable T&D service;
- Encouraging efficient use of the T&D system, e.g., providing incentives for off-peak use;
- Practical factors, including how and when customers will need or want to use electricity for a given end-use;
- Accessibility of the optional rates, e.g., not requiring separate metering;
- The importance of customer education.

Finally, Staff proposes that these rates be available broadly and as soon as practicable, understanding that CMP or Versant may need to develop additional metering and/or billing capabilities to do so. Staff requests additional information from the utilities on this point, among others, as well as on schedule expectations, in response to this Straw Proposal.

II. Electric Vehicle Charging

A. Residential and Small Commercial Customers (kWh charge-based rates)

CMP's proposal for EV charging for residential and small commercial customers is based on extending the availability of existing optional residential and small commercial rates, e.g., TOU and Thermal Storage, to this end-use and to make modifications to the structure of those rates (i.e., increasing the customer charge and lowering the usage charges). CMP proposes that the rates be available either as a "whole house rate" or by separately metering the EV charging load, the choice being left to the customers. Finally, although a customer would not be required to have an EV charger to be eligible for the rate, CMP would market the rates as an option for this use.

These CMP rates appear to provide useful options for at-home EV charging, most notably because of the relatively lower rates for kWh usage off-peak. Thus, Staff is generally supportive of CMP's proposed approach.

Versant's proposal for residential EV charging in the short-term in the Bangor Hydro District (BHD) (before its new AMI system is in place) is similar to CMP's. Versant proposes an "EV Rate 1" that would "track" its existing residential TOU rate.[2] Similar to CMP's proposed approach, Versant would offer this rate on a "whole house" basis and would not require that a customer have an EV charger to be eligible. Versant also proposes expanding its existing BHD thermal storage rate (ETS) to EV charging. Approaching availability differently than CMP for "EV Rate 2," Versant would require the EV charger load to be separately metered, although it proposes not to charge customers a separate "customer charge" for this service. Versant appears to be proposing to restrict access to this rate to residential single-phase service only. It appears that Versant is not proposing any residential EV rates for the Maine Public District (MPD) until after the deployment of meter and meter data management system (MDMS) upgrades.

[2] Staff interprets Versant's proposal to mean that the EV Rate 1 would be the same rates and structure as its existing residential TOU rate and the EV Rate 2 would be the same as the residential electric thermal storage rate.

Staff is generally supportive of Versant's residential EV rate proposals, although, as noted above, our preference is generally that rates be available without any requirement for separate metering due to additional metering costs and the difficulties of ensuring/enforcing that only the allowed end-use is taking service through that meter. The Staff asks for comment from Versant on the possibility of also offering the EV Rate 2 (and possibly the ETS rate itself) as a whole house rate that does not require separate metering. Finally, Versant is requested to address whether it might be appropriate to expand availability of the residential space heating rate in the MPD to residential EV charging, at least until the AMI system is in place. Versant is also requested to provide an update of its schedule for deployment of new meters and MDMS.

Unlike CMP's approach of applying the residential option to small commercial customers, Versant proposes to use its small-commercial classes in both the BHD and the MPD, with minor modifications, to support EV charging. In the BHD, Versant's proposals for Level 2 EV charging ("EV Rate 3") appear to be its existing small commercial/general service rates with an increase to the allowed maximum demand in the BHD from 25 kW to 50 kW. For the MPD Versant proposes "EV Rate 4" based on the MPD small commercial/general service rate that allows customers up to 50 kW during two of the five winter months.

The extent to which these proposed rates are suitable for or would support Level 2 charging is unclear. Nor do they appear to provide any incentive to encourage off-peak EV charger use. Staff requests comment from Versant and other parties on this point. In addition, Staff requests comment on whether Level 2 chargers should be allowed to take service under Versant's proposed rates for residential EV charging.

B. Non-residential Use (Level 2 +; demand charge-based rates)

CMP's proposal for non-residential EV charging is to expand its existing B-DCFC Rate to all separately-metered chargers that would fall within the class

definitions for MGS, IGS and LGS and eliminate the July 30, 2030 sunset date. Rate B-DCFC, currently available only to chargers installed after February 2020, is currently under study in CMP's Rate Design pilot. CMP has three out of the four eligible customers enrolled in the pilot and preliminary results suggest that these customers have saved approximately 46% on their delivery costs under Rate B-DCFC. CMP suggests that availability of rate B-DCFC should be extended to all EV fast charging stations in the State. The Company also proposes to make modifications to the rate structure of the B-DCFC rates (i.e., increase the customer charge and lower certain usage charges).

One of the most notable features of Rate B-DCFC is its separate demand charges for "coincident peak" (CP) vs. "non-coincident peak" (NCP) demand. The CP demand charge, which is materially higher that the NCP demand charge, is charged on the basis of the customer's load during the hour of CMP's monthly system peak. Stated another way, ***all*** of the charges associated with this category of costs are recovered based on the customers' usage in that single hour of each month. In contrast, other demand-related costs, e.g., for distribution facilities, are recovered on the basis of each customer's peak usage whenever it occurs. Thus, in the aggregate for all customers, this covers a much broader period of time. The logic for the CP demand charge is largely to track the drivers for local and regional transmission costs. Because of its "peakiness" and its magnitude, this structure and level of the CP demand charge provides a strong price signal. However, the full effectiveness of the signal can only be realized if customers are aware of it and can respond to it. Because the peak hour of the month is only known after after-the-fact, it is not possible to provide customers certainty about when that peak will occur prior to it happening. Nevertheless, providing customers with additional information on which hours are more likely to represent the system peak should make such price signals more effective.

As noted above, Rate B-DCFC is the subject of an ongoing pilot program. Pending review of the pilot, Staff would support CMP's proposal to expand the availability of the rate. However, additional expansion for EV charging should be

postponed until after the pilot has been reviewed. Perhaps the most significant issue to be considered during the review of the pilot is the extent to which customers are cognizant of, and can respond to, the price signals provided by the rate, most notably the CP demand charge.

In addition to Rate B-DCFC, CMP proposes a special rate for "public transit" EV charging, Rate B-PTEV, which the Company describes as including transit and school busses, as well as ferries. Rate B-PTEV would require separate metering, and would be available to MGS, IGS, and LGS level EV chargers that "provide regular, continuing shared-ride surface transportation services that are open to the general public or open to a segment of the general public…" As proposed, the rate would be designed to cover the marginal cost of service but would reflect a discount of more than 15% compared to the existing tariff rates. The structure of this rate differs from B-DCFC in that customers would be charged for all demand-related costs on the basis of NCP demand. CMP's support for the discount and rate structure for this EV sector appears to be twofold: (1) *Maine Won't Wait* [3] identifies reductions in vehicle miles travelled as a greenhouse gas reduction strategy, and (2) public transit vehicle usage and charging requirements may not allow for flexibility with respect to charging time.

CMP presented two options for Rate B-PTEV: one that reflects its existing TOU periods and one that reflects proposed changes based on its most recent marginal cost study. These would increase the customer charges and modify the on-peak periods from the current standard of weekdays 7AM to noon and 4PM to 8PM in all months to 11AM – 6PM (weekdays) in July and August and then 5PM – 9PM (weekdays) in all other months. It is unclear to Staff whether CMP intends these to be separate options available to customers or only one of these options could be chosen as the rate available to customers. Staff asks CMP to clarify its intention for this rate. However, at this point, Staff does not support CMP's proposed Rate B-PTEV. There does not appear to be a rationale for providing a

[3] *See*, https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf.

rate discount to this particular EV usage sector, (the effect of which would be to shift revenue recovery to other customers), nor is it clear that the EV charging requirements of this sector are significantly less flexible than those of non-public transit users.

In addition to the proposed expansion of Rate B-DCFC, CMP is also suggesting changes to its regular TOU classes to update its TOU periods to reflect its most recent marginal cost study, which would appear to result in on-peak periods of 11AM – 6PM (weekdays) in July and August and 5PM – 9PM (weekdays) in all other months. Customer charges would be higher and demand charge rates would be notably higher in the July and August on-peak diurnal periods while in other months rates for non-peak hours would decrease. As noted earlier, to facilitate making beneficial rate structures available to customers as soon as possible, Staff is in favor of generally maintaining the existing rate structures unless there is broad agreement on certain changes such as raising the minimum charge and lowering usage charges.

For DCFC charging, Versant proposes for both the BHD and the MPD to offer its existing medium/large general service rates but with transmission-related charges recovered through a CP demand charge rather than an NCP charge. This structural approach would be similar to CMP's Rate B-DCFC; thus, with the notes above regarding CMP, Staff is generally supportive of Versant's proposal. However, the Staff asks that Versant provide additional clarification on two points related to its medium/large rate modification proposals. The Staff requests that Versant explain why it proposes reductions in its distribution components (customer charges, NCP demand charges, and distribution energy charges) and to clarify whether billing on a combined CP and NCP basis is something that its existing billing system in each service territory can accommodate or whether these options will only be available after the AMI and MDMS system project is complete.

Comment is also sought from both CMP and Versant on a) whether their proposals for the DCFC charging rates would be available to facilities only through metered usage for DCFC charging, or whether it would also be available on a whole-facility basis and b) whether, in the instance of separate metering, multiple charging stations that are physically separated (e.g., spread across a large campus) would be able to share an individual meter in some way or whether each charging station would require a separate meter.

III. Space Heating (Heat Pumps)

A. Residential and Small Commercial

CMP's proposal is to expand eligibility under its existing rate for thermal storage (Rate A-LM) to include heat pumps as well as making some changes to the design of the rates (i.e., higher fixed charge and lower usage charges as well as modified TOU periods). In support of its proposal, CMP cites the effectiveness of Rate A-LM in promoting the use of thermal storage devices to provide heat by using electricity off-peak. This rate requires separate metering. Presumably, the other CMP rates applicable to residential and small commercial customers would also be available to customers with heat pumps.

In Staff's view, Rate A-LM is not particularly applicable or useful for heat pumps given that, unlike thermal storage, heat pumps are not a technology that provides a mechanism to store heat for use at another time. More relevant rate structures would be ones that reflect (i) larger differentials in the higher monthly fixed charges and lower per kWh charges and/or (ii) declining block rates. These types of structures are consistent with the underlying cost of T&D service (much of which does not vary with kWh usage) and would also tend to reduce the bills of customers with higher-than-average kWh usage, e.g., customers that use heat pumps, compared to other residential and small commercial rates. Moreover, as noted above, the Staff is not in favor of rates that require separate metering for a particular end-use.

Versant notes that existing rates are currently available for customers that heat with electricity and provide a discount for kWh usage above what would be typical for an average customer. Specifically, during the “heating season” (October-April) BHD Rate A-20 for monthly usage above 700 kWh (“tail block”) is about 50% of the standard residential rate. The charges for other rate components, i.e., transmission, stranded costs, and conservation, are not discounted for tail block kWh, so the T&D kWh tail block rate is about 35% lower than the rate for the initial block. Versant has similar declining block rates for residential customers in the MPD (Rates A-H and A-HN).

Versant currently has two options for small commercial customers in the BHD, one of which does not require separate metering and the other which does. (Rates B-2 and B-3, respectively). These rates appear to be structured to achieve the same result, which is to provide a discount for kWh usage associated with the customer’s heating load. Staff notes that the magnitude of the discount provided appears to be less than what is reflected in the Versant residential rates described above, and requests comment on the rationale for the difference. In addition, Staff asks for comment about why the B-2 Rate (whole house rate) is not available for new construction and an explanation of why this exclusion is appropriate. Versant has not yet proposed a rate to support commercial thermal storage and/or heat pump rates in the MPD. It proposes to consider this as part of the decisions regarding AMI and MDMS system capabilities in MPD. Versant is requested to provide its view on expanding the residential declining block heating rates to small commercial customers in the MPD.

As noted above, in Staff’s view, a declining block rate appears to be a useful structure for supporting the use of heat pumps. Thus, Staff is generally in support of Versant’s proposed approach. CMP is requested to provide its perspective on this, as well as information about its ability to meter and bill residential and small commercial customers in this manner. Finally, Staff asks for comment on whether, and if so how, a declining block structure coupled with a

higher fixed monthly customer charge would provide additional support for heat pumps.

IV. Energy Storage

CMP proposes to expand the eligibility of the B-DCFC rate to critical care facilities with energy storage.[4] To enable a critical care energy storage EMT pilot, CMP has proposed to have this rate available to critical care facilities with energy storage by May 1, 2022. CMP indicates it could manage this expansion, as well as the expansion to all EV charging stations, under its current manual billing process used for rate B-DCFC. Longer term, CMP proposes to expand the eligibility of Rate B-DCFC to allow for its use by any medium/large C&I customers once it has completed steps necessary to automate the billing of this rate. Currently, CMP appears to anticipate this automation work will be completed by the end of first quarter 2023. This would then enable any of these customers to use the rate for energy storage facilities. CMP's proposals to expand the use of rate B-DCFC currently require separate metering for the applicable load, with the exception of the critical care storage facilities. In Staff's view, it would be preferable to allow all customers served under Rate B-DCFC to choose whether to separately meter their applicable load because separate metering adds additional costs for customers that may not be necessary as presumably the same price signals could be beneficial for other load as well. Staff requests CMP to comment on this possibility.

Although not explicitly noted by CMP, Staff assumes that the Company's proposals for EV charger use for residential and small commercial customers would be available for energy storage as well CMP should confirm this in its response to the Straw Proposal.

[4] Critical care facilities are described in P.L. 2021, ch. 298 Sec. 6 as "including but not limited to, hospitals, health care facilities, fire departments, emergency medical service departments, police departments, public safety buildings, emergency shelters and other facilities providing critical services."

Finally, in Docket No. 2021-00273, CMP filed an electric delivery rate schedule for qualifying energy storage facilities providing certain services to ISO-NE. CMP indicated that this filing is meant to align its rate schedules with ISO-New England Schedule 21, Section II.9 to comply with FERC Order No. 841. That filing reduces to zero the RNS and LNS charges for those specific qualifying energy storage facilities.

Versant's proposals for energy storage appear to be the same as its proposals for EV charging.

With respect to the utilities' proposals, Staff notes that similar rate structures for energy storage and residential EV charging make sense in some respects, most notably because of the lower off-peak rates that would accommodate and incentivize charging during off-peak times. Staff is unclear, however, on the applicability or usefulness of the "CP charge" structure for medium/large C/I customer energy storage. For example, in contrast to the expected high demand/short duration usage profile of an EV fast charger, is it not possible or even likely that the usage profile applicable to storage could be lower demand and longer duration? Staff requests comment on this, as well as on whether generally available existing medium/large commercial/industrial rates would be suitable for this end use.

V. "Make-Ready Work" Issues

CMP and Versant have both filed proposed T&C for EV charger "make-ready" related issues. CMP has a current make-ready pilot that provided company investments in infrastructure for 60 Level 2 EV charges. CMP indicates that the pilot is oversubscribed and recommends that the Commission consider a comprehensive make-ready program, expanding on this pilot. Versant proposes a 2-year pilot whereby it would work with EMT to support make ready work for up to 5 locations. Under the pilot, Versant would provide make-ready work up to a total cap of $300,000, prioritizing the sites based on certain identified criteria related to public need and accessibility.

Staff's view is that further expansion and/or pilots for make-ready work should be postponed until after the information from the current CMP pilot has been reviewed. Moreover, EMT's budget includes significant levels of federal and other funding to support EVs that may be available to address make-ready work.

VI. Other Issues

A. TOU Periods

Staff requests comment on the utilities' existing and proposed new TOU periods. In particular, Staff requests comment on whether the TOU periods should be simplified, for example, by making them uniform across all months of the year rather than having TOU period definitions that differ by season. Staff understands that the obvious tradeoff between these two approaches may be precision (with respect to cost-of-service) vs. simplicity. Putting a finer point on the question, parties are asked to comment on how the Commission should weigh these considerations within the context of establishing new rates intended to support the applicable State policies.

B. Customer Outreach/Education

Staff believes that in order to facilitate adoptions of beneficial electrification and storage it will be critical that customers are aware of the various options available to them and understand the potential ramifications of such rates. Staff is hopeful that EMT and the utilities will coordinate efforts on such customer outreach and education. Staff requests that utilities and EMT provide information on their plans for customer outreach and education as well as on plans for coordination between EMT and the utilities.